

# Montana Natural Heritage Program

## Four-Year Strategic Plan

July 2006 – June 2010

***The Mission of the Montana Natural Heritage Program*** is to be Montana's source for reliable, objective information and expertise to support stewardship of our native species and habitats, emphasizing those of conservation concern.

***Our vision for success*** is that Montana decision-makers and resource managers – both public and private – rely on information and expertise from the Natural Heritage Program to maintain healthy species populations and habitats, and avoid needless losses and declines in Montana's biological wealth.

### ***Preamble to the Plan***

This plan was developed with broad input from our partners and information users. As such, it represents an agreement with partners about how the Montana Natural Heritage Program (NHP) will focus its efforts over the coming four years. This charter is particularly important as the program transitions to new administration under the University of Montana.

The plan's goals and objectives focus on major statewide needs for information on Montana's biological resources, as identified by our partners and information users. Although this plan is intended to direct only the activities of the Natural Heritage Program, its success clearly depends on extensive cooperation with and major contributions from our many partners.

No plan can read the future with complete accuracy, nor can we anticipate all the new developments in information and technology. Therefore, we will continue to review objectives and strategies periodically, and update them if appropriate, in consultation with partners.

**GOAL 1. Accurately document the distribution and status of Montana's native species and habitats, emphasizing detailed documentation of those that are seriously declining or at-risk.**

### ***OBJECTIVES:***

- A. Bring species distribution databases up to date with available information, processing the backlog of new data and conducting a thorough update and cleanup of existing information in POD and Biotics.**

#### *Strategies:*

- Develop an integrated hierarchy of tracking units, including observations, occurrences, inferred extent, predicted habitat and state range maps for animal Species of Concern and selected other species.
- Develop automated procedures that facilitate updating and integration of new data from POD into Biotics, with assistance from NatureServe.

- Conduct comprehensive review of POD, including updates, validation, and correction of significant errors and omissions in data content and structure, emphasizing Species of Concern.
- Systematically review and revise Biotics records for all Animal Species of Concern, uploading POD records, creation of occurrences and inferred extent, and documentation of tracking units and mapping conventions used.
- Develop predicted habitat maps and revise/update state range maps for Animal Species of Concern.
- Review existing Biotics records for Plant Species of Concern, clarifying status, improving spatial accuracy, and incorporating more complete source and citation information whenever possible, focusing on G/T1-3 and S1 taxa.
- Obtain additional herbarium and museum records for tracked species and integrate them into the data system.

**B. Coordinate and increase interagency sharing and exchange of animal and plant observation data through the NHP databases.**

*Strategies:*

- Establish and chair a biological data management workgroup for Montana's resource management agencies, to promote sharing of data through consistent data formats and data collection standards.
- Coordinate closely with Montana Fish Wildlife and Parks in the development and maintenance of data needed for the state's Comprehensive Fish and Wildlife Conservation Strategy.
- Develop tools, procedures and agreements for electronic submission and import of data from major data sources, including forms compatible for use in PDA's.
  - Develop a spatially enabled web interface for documenting species observations and survey effort.
- Implement methods and procedures for regularly obtaining new or updated data from non-digitized sources (museums and herbaria).
- Regularly export data to partner databases, with agreements and support.
- Develop electronic links to other major data sources on the distribution of Montana plants and animals, such as computerized herbarium archives, to increase "single portal" access for information users.

**C. Document the diversity and distribution of Montana's terrestrial habitat types and associated biological communities.**

*Strategies:*

- Build a classification hierarchy that links communities to higher level Ecological Systems and habitat types that are useful for mapping and management.
  - Document classification units in the hierarchy to facilitate identification, quality assessment and management and build keys so that types can be identified at various levels of the classification hierarchy.
  - Continue to develop the community classification by ecological sections or similar large project areas
- Implement habitat/system-scale mapping with the ultimate goal of developing a more accurate and useful vegetation land cover layer for Montana.
  - Develop habitat-scale vegetation maps for priority landscapes where vegetation mapping is needed by partners for habitat conservation and management activities.

- Advance statewide land cover mapping through a leadership role on the land cover I-team
- Become the repository for Montana vegetation plot (training) data for land cover mapping.
- Build consistent and cost-efficient National Wetland Inventory (NWI) mapping capability within Montana and link NWI mapping types with added ecological information content
  - Develop wetland mapping capability in priority areas first so that a larger regional or statewide effort can succeed
  - Establish a crosswalk with associated information that integrates NWI mapping with vegetation and hydrogeomorphic classifications
  - Continue NWI mapping statewide and deliver wetland ecological information and mapping for Montana
- Develop and implement methods to build a more complete database of community element occurrence and site records that document areas with high quality vegetation communities or habitat mosaics, emphasizing types that are of conservation concern.

**D. Document the diversity and distribution of Montana’s aquatic habitat types and associated biological communities.**

*Strategies:*

- Develop and implement a classification and information system for lotic aquatic ecosystems
  - Complete the aquatic classification for Montana’s Missouri River watershed, defining biological communities across a disturbance scale from reference site conditions to degraded sites
  - Link aquatic communities to riparian community types.
  - Expand the aquatic classification statewide.
- Document the characteristics of aquatic community and habitat types to facilitate identification, understanding and management, emphasizing reference conditions and key management factors.
- Develop the aquatic ecosystems database into the most current, comprehensive and widely-accessible source of information on Montana’s aquatic communities and ecosystems.

**E. Assign, document, maintain and report status ranks that accurately reflect the biological status of species, habitats/communities, and occurrences, and work with partners to implement monitoring strategies that track the status of priority species/groups, habitats and landscapes.**

*Strategies:*

- Establish and lead expert working groups to participate in status reviews, ensuring maximum input, documentation and agreement.
- Assign EO ranks, using consistent and documented criteria, to new or updated occurrence records wherever sufficient information is available, and review existing records for priority species to assign ranks where possible.
- In consultation with expert working groups, review species and habitat status ranks regularly (or when new data is obtained), using standardized procedures, and documenting all rank changes and reasons within the data system in reportable formats.

- Publish and distribute updated Species of Concern reports on a specified regular basis.
- Document standards for evaluating the condition and monitoring the status of vulnerable or indicator species and habitats, and work with partners to implement monitoring programs to detect significant trends in priority species/groups, habitats and landscapes (includes re-surveys).
- Provide rank documentation via the web, and develop web tools for soliciting ranking information and comment.

**F. Work with partners to identify priority information gaps on the distribution and status of species and habitats, including the ecological factors driving those patterns, and develop and implement coordinated strategies to address those needs.**

*Strategies:*

- Develop coordinated statewide inventory/assessment plans for priority habitats and species groups (including plants, bats, reptiles, amphibians, small mammals, selected birds and terrestrial invertebrates, and spring/seep relictual fauna) and work with partners to fund and implement those plans across multiple ownerships.
- Work with private landowners to expand data collection on private lands, emphasizing those with conservation easements, to provide a more complete and accurate picture of the status of species and habitats.
- Work with at least one Tribal government to develop a pilot project for conducting inventory and managing locational information on Reservation lands.
- Identify key ecological knowledge gaps for priority species/groups/habitats and work with partners to develop and fund projects that address those gaps.
  - Design inventory work to capture habitat and ecological information that increases knowledge of species' ecological needs and factors that influence their distribution and status.

**GOAL 2. Assemble the biological, ecological and related information needed for managing Montana's native species and habitats, emphasizing vulnerable species and habitats and areas providing important habitat values.**

**OBJECTIVES:**

**A. Develop and maintain comprehensive on-line field guides and source databases that document Montana Species of Concern and Potential Concern and ecological habitat types.**

*Strategies:*

- Identify and extract available information on Species of Concern from published and gray literature, and archive it in database records that populate the on-line field guides.
- Extract field guide information from past NHP reports and ensure that information generated by current and new projects is systematically archived in appropriate database records.
- Assemble images and illustrations for identification and documentation of species and habitats, maintained and documented in an image management system.

**B. Maintain up-to-date spatial documentation of all public and conservation land holdings through the Montana Land Stewardship map.**

*Strategies:*

- Annually update all Stewardship data through data solicitations, exchanges and review from all major public land management agencies and land trusts.
- Clarify and potentially formalize the role of the Natural Heritage Program in managing this information for the state, and continue to pursue integration with the state's cadastral database, as appropriate.

**C. Develop formats and tools that support the integration, visualization and analysis of biological information at multiple scales.**

*Strategies:*

- Summarize biological and ecological information on landscapes that support significant habitats and/or species, based primarily on NHP survey work, as Site Records in Biotics.
- Develop GIS methods used in the watershed assessments to generate analytical products that are more useful for management and conservation planning. Standardize and automate assessment techniques, and web-enable them where feasible.

**D. Make a significant contribution to the tracking, understanding and management of invasive species, particularly as they affect Species of Concern and important habitats and landscapes.**

*Strategies:*

- Systematically document and report weed observations encountered during field inventory.
- Develop and implement methods to track, analyze and report invasives threats to priority species and landscapes within our databases.
  - Begin tracking weed observations related to species and community occurrences and significant sites within Biotics.
  - Analyze our databases to identify areas where priority species and/or habitats are at risk from weed invasion and biologically rich areas where managers can proactively control invasive weeds.

**GOAL 3. Actively disseminate information using highly effective tools and formats, and provide staff expertise and support to ensure that users can find, interpret and successfully utilize information for effective resource management and decision-making.**

**OBJECTIVES:**

**A. Develop the public website with content and applications that are easy to use, well designed and documented, and provide users with effective access to information that serves their needs.**

*Strategies:*

- Continue to add key data types of value to users.
  - Add landscape/site information to web applications in spatially searchable formats.
  - Build access to interpreted observation and element occurrence data.
  - Add rank documentation to the Animal Field Guide
- Develop tools for overlaying and intersecting NHP and related data layers to better enabling users to characterize and visually analyze geographic areas of interest.
  - Integrate species search with NRIS mapper to produce a more unified approach for accessing spatial data on biological features and related features.
- Improve users' ability to select, "package" and export data and information of interest from the NHP website.

- Expand access to images of species and habitats, building linkages to the MTNHP photo archive database.
- Further develop customized internet applications that provide partner agencies with detailed information about the lands and resources they manage.

**B. Implement an ongoing support program to train and inform agency partners in effectively using technical resources, services and applications.**

*Strategies:*

- Give presentations and workshops at key user meetings to describe resources available and demonstrate data access methods.
- Conduct on-site training with partner agencies in use of specialized applications for accessing data on lands and resources that they manage.
- Provide regular updates (at least quarterly) on the website and through emails as new resources become available (including reports, web tools, field guide enhancements, etc.)
- Regularly gather information from users about their information needs, format/access preferences, and the effectiveness of our delivery systems and tools. Involve users in applications development and testing to ensure that the tools produced meet user needs as effectively as possible.
- Work with agency partners to provide technical assistance in applying biological information in their programs and management activities, emphasizing priority species and habitats.
- Conduct occasional field workshops to increase partners awareness of and ability to survey and manage for different habitats and species groups.

**C. Produce high quality, accessible reports that summarize results of inventory and analysis projects and are directly applicable to management and planning.**

*Strategies:*

- Archive findings link report contents to standard databases.
- Enable spatial search for MTNHP published documents.
- Convert past reports to digital format and add to the MTNHP website.

**D. Improve efficiency and effectiveness in responding to information requests.**

*Strategies:*

- Improve efficiency, minimizing staff time for routine responses and maximizing the “value added” for staff time invested.
- Evaluate the feasibility of empowering users to self-serve basic data requests.

**GOAL 4. Maintain a healthy, viable, stable and widely-respected program that is supported and staffed to achieve the mission.**

**OBJECTIVES:**

**A. Establish a long-term institutional home that provides effective administration and support for continued excellence, innovation and strong partnerships.**

*Strategies:*

- Complete the Alternatives Assessment process, thoroughly documenting the guiding principles, options considered, stakeholder input, administrative factors, and final recommendations.

- Fully vet prospective transfer of the NHP contract and administration to the University of Montana and negotiate/confirm effective terms for transfer; if an effective transfer proves not to be possible, identify the best alternatives.
- Manage any transfer of the program in a way that maintains or improves continuity and support for staffing, services and administrative functions.
- Establish the Natural Heritage Program as a visible, well-supported and stable program within the contracting institution, and maintain strong integration and support for the Program within the Montana State Library.

**B. Establish a committee of funders and other key stakeholders to increase communication and coordination both with and among partners, and to ensure user satisfaction with and support for the Natural Heritage Program.**

*Strategies:*

- Form a Partners Committee, with support from the NRIS Advisory Committee, that provides the flexibility to involve state, federal and other relevant partners on an equal footing.
- Establish maintenance of this Committee as a responsibility of the contracting institution, in cooperation with the State Library.
- Consult with the Committee on a regular basis to help establish priorities, address financial and operational challenges, resolve differing needs and expectations, and provide opportunities for coordination of activities and funding.

**C. Secure reliable ongoing support for core functions of data assimilation, management and dissemination.**

*Strategies:*

- Increase funding for core services by at least \$225,000 to support 10 essential core FTE: Director, 3.5 Science specialists (Zoologist, Botanist, Ecologist, .5 Aquatic Ecologist), 5 IT specialists (Systems/Services Mgr, Database Coordinator, Biological Data Specialist, Data Assistant, Web Developer), and 0.5 Finance Administrator.
  - Secure support for NHP services from federal agencies that use them and supplementary support from state agencies proportional to their needs and levels of use.
  - Develop state budget proposal for significant increase in core contract funding in the FY08-09 biennium.
- Work with partners to secure support for priority projects and activities identified in this plan and in annual work plans that are not funded in support for core services.
- Work with the State Library and the contracting institution to ensure strong and effective advocacy of the Natural Heritage Program within the state budgeting and appropriations process.

**D. Significantly increase awareness and support for NHP and its services among key partners, information users, funders and decision-makers.**

*Strategies:*

- Publish the Optimolocus newsletter twice per year to provide partners with information on program activities, staffing and achievements, and publish information from and about MTNHP in partner publications to reach a broader range of users as well as the interested public.
- Establish a process for email update to inform users about new publications/resources and changes in services.

- Regularly solicit input on priorities and suggestions through the Coordinating Committee and user surveys.
- Develop or strengthen strategic cooperation with key partners that offer opportunities for increased use of and/or support for MTNHP information and services, including Universities, MFWP, Tribes, agency field offices, industry and agriculture sectors, and local government.

**E. Provide a healthy, well-equipped and flexible work environment that retains a highly skilled, dedicated and productive staff.**

*Strategies:*

- Ensure that staff have effective office space and services within the State Library, and room to grow if/as appropriate to the needs and support of partners.
- Work with the NHP managing institution to improve access to timely, useful and accurate financial information needed for successful tracking of expenses on contracts and projects.
- Ensure strong internal communication that fosters a shared commitment of purpose and priorities, celebrates accomplishments, promotes collaboration, and engages staff at all levels.
- In any transfer of NHP administration, ensure that staff retain comparable benefits & compensation, and work with the State Library and the contracting institution to provide staff with a clear sense of inclusion and support.